

time to be made public. The resolution which has now been come to is to go on with the undertaking, and the scheme is of a twofold character: (1) to undertake a scientific exploration and description of the Firth of Forth and the adjacent parts of the North Sea; and (2) to establish a marine station for biological investigation and research, where competent scientific men may find laboratories and all the appliances for research free of charge. With respect to the first branch of the scheme, it is meant to take the temperature of the water at fixed points of the Firth, extending from the fresh water of the Firth out to points beyond the Isle of May. The temperatures of the surface water and of the bottom and intermediate waters are to be taken at stated intervals throughout the year. It is part of the same scheme to note the character of the surface fauna and flora regularly throughout the year at these points, and the changes in the specific gravity of the water at the different times of the year and at different parts of the Firth. Observations will also be carefully laid down on the Admiralty charts of the nature of the bottom, and of the deposits, throughout the whole region, and a record of the animals living upon these is also to be attempted, so as to arrive at a complete scientific description of the bottom and its deposits. To this will be added a record of the effects upon the fauna, &c., of the admixture of river and ocean water at different parts, and of circumstances favourable or inimical to life and growth. Under the second branch of the scheme the proposal is to establish at Granton Quarry, and at various places in the Firth, investigations as to the hatching, breeding, and growth of various kinds of fish and marine invertebrates in inclosed spaces, or in cages moored at various points. The central station will be situated at the quarry. Here it is proposed to build, on a high part of the banks surrounding the quarry, a substantial cottage, from which a beautiful view of the whole Firth will be had. The cottage is to be fitted up with laboratories, and will consist of about six rooms, and cost from 400*l.* to 500*l.* On a level piece of ground adjoining the quarry there will be erected an iron cottage and shed for the keeper of the station, and for housing the trawls, dredges, nets, and other instruments required for the proposed investigations. This will cost from 150*l.* to 200*l.* Also, as part of the scheme, there is to be built a floating laboratory—that is to say, a laboratory built on a barge of the description mentioned to the Royal Society, and supplied with all the materials and apparatus requisite for biological investigation. This structure, it is interesting to note, will be so fashioned that it may be taken to any part of the Firth of Forth, and moored in sheltered spots during the summer wherever it may be thought desirable that investigations shall be carried on at any particular spot. This laboratory, it is intended, will give accommodation for three naturalists, with workrooms, and will cost about 800*l.* The station, furthermore, is to be provided with a steam launch fitted for dredging purposes and the making of hydrographic observations. The launch, according to the design, is to be built upon the plan of the steam pinnace that accompanied the *Challenger* during her cruise, but much larger, and will be provided with a separate engine for rolling in the dredges. This again will cost about 800*l.* In addition to these things there will be a small portable house belonging to the station, which may be put up on Inchkeith, Inchmickery, Inchcolm, or the Isle of May, should it be desirable to carry on any observations at these places. This, together with the cages formerly described for inclosing portions of the ocean and water of the quarry, will cost, it is estimated, about 300*l.* more. The fund which was granted by the Committee of the Fisheries Exhibition is to be applied, at the rate of 300*l.* a year for three or four years, to the keeping up of the station and the payment of the annual working expenses, including the salaries of a resident naturalist, an engineer,

and a keeper. So that what is now wanted in order to the full equipment of the station is about 1500*l.* to pay for the permanent works which are required before the station can be in complete working order. In the event of this sum being forthcoming at an early date, it is thought that the whole institution would be in working order next spring—probably by March or April.

It is believed by a number of our scientific men that an undertaking of this kind, which will afford the means of making continuous observations into the circumstances which affect marine animals and plants—their food and their enemies—is the true method of getting the information necessary to settle many of the vexed questions with respect to the life histories of our food fishes, both of the salmon and sea fishes. The Firth of Forth yields special facilities for work of this kind. Thus, almost all our food fishes are frequenters of the Firth, and it is known to have a rich fauna, which has at various times been investigated by distinguished naturalists, as by Johnston of Berwick; Parnell, Allman, Forbes, Herdman, and others. A thorough investigation of the kind proposed will lead to great additions to knowledge, and will probably give the information that was wanted as to the evil effects or otherwise of trawling, which is one of the vexed questions at the present day. By directing their efforts to the thorough working out of a somewhat limited area like the Firth of Forth, in its meteorological, hydrographical, and biological aspects, the Committee believe that more rapid progress will be made than by intermittent observations at widely separate points. Such a station will also be a great boon to naturalists who desire to work at any special subject. Naturalists are often deterred from undertaking investigations because of the difficulty of providing themselves with dredges, steam-launch assistance, &c. Here they will have these ready at hand whenever they choose to visit the station. So that, from this point of view, in addition to the purely scientific aspect of an undertaking of this kind, it probably will be found to have a very wide economic bearing. The plans of the floating laboratory and of the other structures to which reference has been made are in the hands of Mr. Murray, from whom persons interested or desirous to aid in the carrying out of the scheme will receive every information they may wish to have.

NOTES

THE Directors of the Ben Nevis Observatory met on Thursday, 6th inst., and out of a list of nineteen applicants elected Mr. R. T. Omond, Edinburgh, Superintendent of the Observatory. Mr. Omond was a distinguished student of Edinburgh University, and for the past six or seven years has been chief assistant of Prof. Tait in conducting an extended series of physical experiments on the influence of pressure on deep-sea thermometers, the maximum density of water under different pressures, and cognate subjects of inquiry. The results of his work have been communicated in the form of papers to the Royal Society of Edinburgh. Mr. Omond's duties began from the above date; and shortly two assistants will be appointed, so that in October next a staff of three observers will have taken up their station at the Observatory, prepared to enter upon the work of the coming winter. The highest section of the bridle-road to the summit of the Ben was finished on Thursday at noon, and the first pair of horses which ever ascended the mountain made the ascent in the afternoon, carrying 2 cwt. each of building material. The building of the permanent Observatory commenced on the following day. A number of horses are employed carrying up material, and the Observatory is expected to be finished early next month. Arrangements are also being made for laying a telegraphic cable from Fort William

to the Observatory, and it is fully expected that the work will be finished by the time the observers take up their residence on the Ben. We understand that the directors have asked Mr. Buchan, secretary of the Scottish Meteorological Society, to visit several of the more important meteorological observatories on the Continent, beginning with that of Hamburg, and including some of the more notable high-level stations, and report on the automatic and other instruments in use there, with a view to a full and satisfactory equipment of the Ben Nevis Observatory next summer. During the coming winter the work will be mostly restricted to eye observations, with the object of collecting information regarding the climate of the Ben, so as to form some guide to the directors in determining the nature of the automatic and other instruments that will be required for making the various observations and conducting the important physical researches which it is proposed to carry out.

THE Lords of the Committee of Council on Education have been informed by the Secretary of State for Foreign Affairs that a note has been received at the Foreign Office from the French Chargé d'Affaires in England stating that the meeting of the Electrical Units Conference at Paris has been postponed till April 2, 1884.

THE president of the American Association at the Minneapolis meeting was Prof. C. A. Young, and as retiring president at the Philadelphia meeting next year it will fall to his lot to give the presidential address. We have already given Principal Dawson's presidential address, and this week we give the address in Section A of Prof. W. A. Rogers on the German survey of the northern heavens. Other important addresses are those of Prof. Rowland, who spoke eloquently on behalf of pure science, Prof. Cope on the evidence of evolution in the history of the extinct mammalia, and Prof. Hitchcock on the early history of the North American Continent. Dr. Folwell, president of the University of Minnesota, pointed out in his address of welcome some of the great triumphs of science in its application to practical purposes: "the further extension of scientific method," he said, "till it shall become the guide of conduct in the everyday life of all men, is now the chief problem in education." So far as reports have reached us, no paper of striking importance was read at the Minneapolis meeting.

THE members of the Swedish Meteorological Expedition at Spitzbergen arrived in Gothenburg on the 6th inst.

AT the general meeting of Tweed Commissioners, last week, it was agreed that 20*l.* should be voted for recommencing investigations regarding the life-history of the various Salmonidæ which frequent the River Tweed. Were similar investigations carried on by the River Conservators in England and by Fishery Boards in Scotland and Ireland, there can be no doubt that information would soon be obtained on many points which are now obscure.

IN the *Comptes Rendus* for September 3 M. Milne-Edwards announces the return to France of the *Talisman*, which had sailed last June to explore the waters of the Atlantic. The expedition has examined the marine fauna along the seaboard of Morocco and the Western Sahara, as well as the waters of the Cape Verde, Canary, and Azores Archipelagoes.

MR. A. HASTINGS WHITE sends us a letter from an Australian correspondent, deploring the wholesale destruction of forests, especially in New South Wales. The correspondent writes:—"I do not know if I have ever mentioned anything about the more than wholesale destruction of the timber going on out here at the present time; but the facts are these. It is a common belief that killing off the timber improves the pastures, and so it does no doubt for a time, but at what a terrible cost. Thousands of acres are killed every year, not even a bush or seedling of timber being left to grow, by cutting a ring round the trees, either

into the wood or else by taking a ring of the bark off. The destruction of timber in this way on Crown lands is something terrible; in parts of the country one may travel for miles at a stretch and see nothing but bleached and dead trees, as if a blight had come over the land."

THE Danish ship *Ceres*, having just arrived in Copenhagen from Julianhaab in Greenland, reports that the *Sophia*, with Nordenskjöld's expedition on board, arrived at that place on June 17, having encountered no ice between Iceland and Greenland. After two days' stay there the *Sophia* proceeded to the cryolite quarries at Ivigtuk, where she took in coals. On June 26 the journey was continued to North Greenland. All was well on board.

ADMIRAL MOUCHEZ has asked for the credit required for the publication of the catalogue of stars established by the Paris Observatory for the last twenty-seven years. The number of stars tabulated amounts to 40,000, but the expenses are so heavy that it is doubted whether the required credit will be granted by the Government.

AN International Forestry Exhibition is to be held next year in Edinburgh.

THE International Medical Congress met last week in Amsterdam. The attendance was very large, delegates having arrived from almost every civilised country on the globe. Amongst the representatives of England were Sir Joseph Fayrer and Professors Lewis and De Chaumont of Netley. The Congress was opened by Prof. Stockvis of Amsterdam University, and the Burgomaster of Amsterdam, who welcomed the Congress on its assembly in the Dutch capital. Amongst the honorary presidents of the Congress are Sir Joseph Fayrer, Professors Lewis and De Chaumont, and Dr. Sydney Jones of New South Wales. The inaugural address was delivered by Prof. Stockvis, after which the Congress proceeded to its more special work under different sections.

AN International Society of Electricians has been formed in Paris under the presidency of the Minister of Posts and Telegraphs, its main object being to centralise all information bearing on the progress of electricity, and to promote its spread and development. Information as to the society may be obtained by writing to M. Georges Berger, 99, rue de Grenelle, Paris.

ON Wednesday last week an electric tramcar trial was successfully accomplished in Paris by the French Electrical Power Storage Company. At three o'clock p.m. the vehicle, an ordinary three-horse tramcar, left the Place de la Nation in the far east, and, after traversing the capital through several important thoroughfares, reached the starting point soon after six o'clock. A distance of thirty English miles was thus made in about three hours. There was not the slightest accident. The ease with which the car was turned off one set of tram lines and got on to another across several yards of unmetalled ground is stated to have been admirable. The locomotion is effected by means of Faure accumulators, weighing some fifty hundredweight, which are fixed under the tramcar seats and connected with a Siemens' machine placed under the floor. The machine, which makes twelve hundred revolutions a minute, sets in movement, by means of a pulley, an axle to which are connected the chains which give impulse to the wheels. These wheels revolve sixty times to twelve thousand revolutions of the machine. The speed of the electric tramcar is nine and a third miles an hour on level ground, and five and a half miles on an ascent. The present tram lines are not well adapted for the new locomotion. On the newer lines the movement was sufficiently smooth, but on those that have been laid for some time there was a marked difference, and the actual working force was considerably lower than the indicated horse-power. The estimated cost is one-half that of horse trams.

IT is proposed to establish a permanent meteorological observatory for the Bristol Channel. Mr. E. J. Lowe, who for the last forty years has carried on a regular series of meteorological observations at Highfield, near Nottingham, has recently purchased the Shirenewton estate, near Chepstow; and, being convinced of the real importance of establishing an observatory which may be carried on through future years without interruption, he has generously offered to present the whole of his valuable collection of meteorological instruments, together with his books and papers, towards the establishment of such a permanent observatory, for which he also offers to give the site, together with such stone and lime as may be required for the erection of the necessary buildings, provided a sufficient sum can be raised in the district to build the same, and to provide a small endowment towards the maintenance of a limited staff of assistants, who would, in the first instance, be under his gratuitous guidance and supervision. Previous to making this offer publicly known, Mr. Lowe conferred with the Meteorological Department of the Treasury, by whom Mr. Scott, F.R.S. (the director of the Department), was sent down, and his report was in every way most favourable, both as to the great utility and importance of the scheme, and also as to the admirable site which Mr. Lowe proposed to offer.

PROF. BROWN GOODÉ, the Commissioner of the United States to the International Fisheries Exhibition, has just received a telegram from Prof. Baird, the United States Commissioner of Fish and Fisheries, to the effect that Mr. Ryder, the embryologist of the Fish Commission, has finally solved the problem of the culture of oysters from artificially impregnated eggs, and that on the 4th inst., at the Government station at Stockton, Maryland, there were many millions of young oysters three-quarters of an inch in diameter which had been hatched from eggs artificially impregnated forty-six days before. It may be added that oysters were artificially impregnated in America by Dr. Brooks, of Baltimore, in 1879, but the difficulty hitherto met with in hatching them has been to prevent the young oysters from escaping and being lost immediately after they are hatched, since the spat passes through the meshes of most finely-woven fabrics, such as flannel.

WE have before us No. 15, Part II., of the "Encyclopædia of Physical Sciences" (from the publishing house of Eduard, Treveland, Breslau), which closes Wittstein's Alphabetical Manual of the Pharmaceutical Technology of Botany. As a conclusion to the work are appended three tables: (1) of the German and other popular names of drugs; (2) of the official Latin names; (3) of the systematic Latin names of mother-plants. The 16th number contains the continuation of the Alphabetical Manual of Chemistry published by Ladenburg, and among other things gives a very comprehensive and concise work by Tollens on "Analysis," and an important monograph by Weddige on "Aniline." The last number which has reached us of the "Encyclopædia of Physical Sciences" is the 34th, Part I., being at the same time the 50th of the whole series. It brings the Alphabetical Manual of Zoology, Anthropology, and Ethnology a considerable stage forward. The editing of this work from the letter F onwards has been committed to Reichenow in Berlin, who, with the old contributors and a large number of newly added co-operators, such as Süssdorf, Vetter, E. Taschenbergs and Georg Pfeffer, is pushing the work rapidly forwards.

ON September 3 the steamer *Nordenskjöld* arrived at Hammerfest with the Dutch Meteorological Expedition saved from the *Varna* on board. The party states that the *Varna* was crushed in the ice on Christmas Eve last, but did not founder until July 24, after which date they were lodged on board the *Dijnphna*. One of the crew died during the winter. The scientific staff are exceedingly well satisfied with the result of their labours,

with the exception naturally of the magnetic researches. Although Hovgaard was confident of getting into open water in August, he had decided that if not free by August 15 half the crew, under Lieut. Olsen, should leave the ship and attempt to reach the coast of Siberia at Válmal, while he, with the other half, would winter on board. All was well on board when the Dutch departed.

THE Norwegian geologist, Amund Helland, states that, having measured the following Iceland glaciers, he finds their area in Norwegian square miles to be: Vatnajökull, 150; Langjökull, 26; Hofsjökull, 25; Myrdalsjökull, 18; Drangajökull, 15; Glámujökull, 8; Forfajökull, 2; and Eyriksjökull, 2. By way of comparison he mentions that the Norwegian glacier, the Justedalsbræ, is only 14½ miles. It will thus be seen that the Iceland glaciers are larger than any others in the world, as those of the Alps and the Pyrenees are even smaller than the Norwegian.

THE Norwegian zoologist, Prof. Robert Collett, a member of the Norwegian North-Sea Expedition, has written an interesting paper on the beaver in Norway. Formerly, he states, this interesting animal was found in many parts of the country, but now only in two rivers in the south. In 1876 a colony of them appeared near Porsgrund, which, however, disappeared again in 1880. Although he estimates the total number of animals at present in Norway at only about 100, he does not believe they are decreasing.

UNIVERSITY COLLEGE, Bristol, is showing considerable enterprise in extending its curriculum and improving the efficiency of its teaching. In the curriculum of work for the coming session there is an increased extension of laboratory instruction; this is a very pleasing feature. During the past session the chemical laboratory was very largely attended. The physical and electrical laboratory is now in full operation, and valuable apparatus has already been procured, though more is wanted when the funds can be obtained. A biological laboratory has also been commenced. In the ensuing session we see that a geological laboratory will be provided. Special arrangements are also made for the systematic use of the engineering workshops. The success of the engineering department hitherto has been most encouraging; and we are glad to see that the Council have now provided several facilities for the study of architectural drawing, and special arrangements for the practical work of students in this department have been made with various engineers, surveyors, and architects in and near Bristol. The medical school is rapidly growing, and already the necessity for further accommodation has become apparent. Want of funds seems to be the only check to the fuller growth and increased prosperity of the College. We believe, however, that the citizens of Bristol will not allow an important institution which is doing so much good work to feel the need of liberal support.

M. BERTRAND read, at the sitting of September 10 of the Paris Academy of Sciences, a report drawn up by the Mayor of Grenoble, assisted by a commission of engineers, contradicting the rumour that the experiments on the transmission of power to a distance by the Marcel-Deprez system had failed. On the contrary, the success was complete. A power of eight horses was conveyed to Grenoble, and the original motive power underwent only a loss of 40 per cent. The force conveyed to Grenoble was utilised not only in pumping water, but in sewing, in moving machinery of every description, &c. The experiments lasted during a lengthened period, and are being continued. We must state that the distance is 14 kilometres, and the wire of copper instead of iron.

FRESH shocks of earthquake were felt at Casamicciola on the 9th and 10th inst.

M. L'HOTTE, a French aeronaut, crossed the Channel in a balloon on Sunday; he left the French coast at 5 p.m. on Sunday, and landed at Smeeth, near Ashford, at 11.

THE additions to the Zoological Society's Gardens during the past week include a White-fronted Capuchin (*Cebus albifrons*) from South America, presented by Miss A. Tanner; two Common Marmosets (*Hapale jacchus*) from Brazil, presented by Mr. H. H. Forbes Eden; three Mexican Deer (*Cervus mexicanus* ♂ ♀ ♀) from the Island of Santa Cruz, presented by Capt. Edwin Cole; a Gt. Ground Squirrel (*Xerus getulus*) from Morocco, presented by Mr. Geo. D. Cowan; a Grey Ichneumon (*Herpestes griseus*) from India, presented by Capt. W. F. Small; a Common Squirrel (*Sciurus vulgaris*), British, presented by Master C. B. Webster; two Stink-pot Terrapins (*Aromochelys odorata*), a Pennsylvanian Mud Terrapin (*Cinosternon pennsylvanicum*), a Mississippi Alligator (*Alligator mississippiensis*), a Sharp-nosed Crocodile (*Crocodylus acutus*) from Florida, presented by Capt. E. Cole; a Common Chameleon (*Chamaleon vulgaris*) from North Africa, presented by Mr. F. I. B. Payne; a White-fronted Capuchin (*Cebus albifrons*), a Black-faced Spider Monkey (*Ateles ater*), a Pileated Jay (*Cyanocorax pileatus*), a Spotted Tinamou (*Nothura maculosa*) from South America, two Ruddy Finches (*Carpodacus erythrinus*) from Siberia, a Jackdaw (*Corvus monedula*), British, four Eyed Lizards (*Lacerta ocellata*), South European, purchased.

OUR ASTRONOMICAL COLUMN

THE TOTAL SOLAR ECLIPSE OF MAY 6.—The *Comptes Rendus* of the sitting of the Paris Academy of Sciences on the 3rd inst. contain the reports from the observers sent by the French Government to Caroline Island in the Pacific for the observation of the recent total eclipse of the sun. The party was composed of M. Janssen, M. Trouvelot of the Observatory of Meudon, M. Pasteur, photographer, and an assistant, who were accompanied by Prof. Tacchini, director of the Observatory of the Collegio Romano, and Herr Palisa of the Observatory of Vienna, the discoverer of a large number of minor planets. One of the main objects of the expedition was a search for so-called intra-Mercurial planets, and it is to the observations made in this direction that we shall refer here. Herr Palisa and M. Trouvelot were especially occupied with this work. The former had a telescope of 6 inches aperture, with short focus and large field, equatorially mounted. M. Trouvelot had two telescopes, one of 3 inches aperture, with large field, reticule, and interior circle of position, and one of 6 inches aperture giving a high magnifying power. The 3-inch telescope formed a sweeping instrument with a field of about $4\frac{1}{2}$ degrees diameter, for the exploration of the circumsolar region. Both telescopes were on a parallactic mounting, and in order to secure rapid record of positions and dispense with the readings, which cause the loss of valuable time, M. Janssen had caused what he terms "tracelets de microscope" to be applied to the circles of right ascension and declination. Each of these, placed in the hands of an assistant, allowed of there being made, on the direction of the observer, a fine stroke across the divided circle and its vernier, so that subsequently, with the aid of this very precise indication, the instrument could be replaced in the position of the observation and the necessary readings made at leisure. It was arranged that MM. Palisa and Trouvelot should divide the work, each attending specially to one side of the sun. The Vienna astronomer's instrument, properly, as it seems, a comet-seeker, by Merz, had a magnifying power of 13, giving a field of 3° . With this, on totality taking place, he commenced his search, starting from the sun towards Saturn, at first on the south, and when he did not thus find stars he returned to the sun, and swept more to the north. In this way he recognised nine stars, all which are identified in the Bonn *Durchmusterung*. We give the list of stars, correcting two misprints in the *Comptes Rendus* ($14^\circ, 355$ should be $16^\circ, 355$, and for $20^\circ, 542$ we should read $20^\circ, 543$), and appending the positions of the stars for the Bonn epoch 1855.0: thus, with the sun's place reduced to the same epoch,

the relative positions of the stars with respect to his centre will be readily seen:—

Bonn Zone and number of star.	Magnitude.	Right Ascension.	Declination.
		h. m. s.	
16,355 ...	5.7 ...	2 41 13.1 ...	+16 51.5
16,484 ...	6.0 ...	2 31 15.2 ...	16 4.1
19,477 ...	4.2 ...	3 3 20.8 ...	19 10.7
19,578 ...	5.5 ...	3 33 57.8 ...	19 13.9
19,582 ...	6.0 ...	3 35 24.5 ...	19 12.5
20,527 ...	4.5 ...	3 6 34.5 ...	20 30.5
20,543 ...	5.0 ...	3 12 51.0 ...	20 37.3
20,551 ...	5.0 ...	3 14 24.8 ...	20 13.4
20,556 ...	5.8 ...	3 16 4.2 ...	+20 17.4

The result of his search Herr Palisa states to be that, between the limits (1855.0) 2h. 52m. from $+14^\circ$ to $+19^\circ$, to 3h. 40m. from $+16^\circ$ to $+22^\circ$, there was no star of the fifth magnitude unmarked in his chart, this, it should be mentioned, being a lithographic chart supplied to him by Prof. Holden, one of the American observing party.

M. Trouvelot's attention was first directed to the study and figure of the corona, but, after the totality had lasted two minutes, he applied himself to explore the region west of the sun. He moved his telescope 10° in declination to the north of the sun's centre, and swept slowly from that point from east to west, to a distance of 15° in right ascension. The first sweep brought out a small whitish star; two other sweeps were made without any result; but in the fourth he saw a bright star of a decided red colour, which he estimated at 4 or $4\frac{1}{2}$ magnitude. Its approximate position was a little to the north, and a little to the west of the sun, but the cause of a more exact determination of position not being made will be best given in M. Trouvelot's own words:—"En voulant amener cet astre dans le champ très restreint de l'oculaire du 6 pouces (0.16m.), afin de chercher à constater s'il montrait traces soit d'un disque, soit d'une phase, il se produisit une certaine confusion parmi les deux aides que j'avais placés aux cercles horaire et de déclinaison pour guider la course des balayages, et bien que l'étoile traversât le champ visuel, il me fut impossible de retenir en place la lunette, et dès lors de reconnaître son caractère et sa position." In the abstract of results of observations appended to the reports of the observers, after reference to Herr Palisa's experiences, we read in the *Comptes Rendus*: "M. Trouvelot arrive à un résultat moins net pour le côté ouest, mais nous savons que cet observateur distingué désire revoir la région où se trouvait le soleil au moment de l'éclipse avant de ce prononcer." It is stated that the photographs, though not yet examined in a complete manner, appear to support the negative result obtained by Herr Palisa as to the existence of an intra-Mercurial planet.

A NEW COMET.—A Dun Echt circular (No. 78) notifies the discovery of a comet by Mr. Brooks on September 2, which was thus observed by Mr. Wendell at the Harvard College Observatory on the following night:—

Greenw. ch. M.T.	R.A.	Decl.
	h. m. s.	h. m. s.
September 3 at 16 9 24.5 ...	16 35 15.6 ...	+ 64 49 33

Daily motions in R.A. — $36s.$, in declination — $12'$. It is described as circular; less than $1'$ diameter; tenth magnitude; well defined nucleus, and no tail.

THE GERMAN SURVEY OF THE NORTHERN HEAVENS¹

THE illustrious Argelander was accustomed to say in the quaint form of speech which he often employed, "The attainable is often not attained if the range of inquiry is extended too far." In no undertaking is there greater need of a judicious application of this sound maxim than in the systematic determination of the exact positions of all the stars in the visible heavens which fall within the reach of telescopes of moderate power.

The first subject which engaged the attention of the *Astronomische Gesellschaft*, at its formation in 1865, was the proposition to determine accurately the coordinates of all the stars in the northern heavens down to the ninth magnitude. To this association of astronomers (at first national, but since become largely international, in its character and organisation) belongs the credit

¹ An address delivered by Prof. William A. Rogers before the American Association for the Advancement of Science at Minneapolis on August 15, 1883.